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Sukuk vs. Conventional Bonds: Shareholder Wealth Perspective

Abstract

This paper investigates whether the stock market reacts differently to the issuance of fixed-rate Sukuk as compared to fixed-rate conventional bonds and hence, if there is a difference in the shareholder wealth effect of these two types of issuances. We use Malaysian publicly listed non-financial firms, event study methodology, market model and FTSE Bursa Malaysia EMAS Index on fourteen different event windows of which five are symmetric and nine are asymmetric. Our sample is divided into three subsamples: overall period (2000-2015), pre-crisis period (2000-2007) and post-crisis period (2010-2015). Our analysis indicates only insignificant difference in the Malaysian stock market reaction to fixed-rate Sukuk- and to fixed-rate conventional bond issuances for the overall period and pre-crisis period. However, and importantly, we find a highly significant difference in the Malaysian stock market reaction to fixed-rate Sukuk compared to fixed-rate conventional bond issuances after the global financial crisis. Such evidence is confirmed when using a wide range of robustness checks including four different market indices and both parametric and non-parametric tests.

Keyword: Sukuk; Conventional bond; Financial instruments; Ethical finance; Malaysia

JEL classification: E4; G2;G14; P5.

1. Introduction

Over the last decade, Islamic finance has witnessed a remarkably broad expansion, including a notable widening of operations of Islamic banks and extensive issuance of investment certificates that comply with Islamic law (Sharia). Today, Islamic finance has grown from its former 'niche' product status and expanded to over 60 countries. With total assets in Islamic banking reportedly exceeding \$1.3 trillion, Islamic mutual funds are estimated to register about \$500 billion, and the issuance of Islamic sovereign and corporate bonds, or Sukuk, totalled \$94 billion in 2013 (Sherif and Shaairi, 2013).

The emergence of the Islamic financial services industry, heavily concentrated in the Middle East and Asia, represents an effort to develop an independent financial system next to the predominant one, and hence offers significant further options for risk diversification. Since its inception, the international Islamic finance industry has expanded and grown greatly. For example, the global Islamic finance assets are estimated to be worth USD 1.87 trillion as of 1H 2014. Much of this considerable growth in assets has been fuelled by Sukuk- or Islamic bond market, which have a similar pattern of structure to conventional bonds, but permit corporate issuers to raise funds in capital markets that comply with Sharia principles (IFSB, 2015). Sukuk is an Arabic word, which is a plural form of Sakk, which means certificate (McMillen, 2007). Sukuk are investment certificates needed to finance new activities where profits and loss are shared between the Sukuk issuer and the Sukuk holder, instead of the more conventional charging or paying a pre-agreed interest rate. Sukuk should satisfy three criteria to comply with Islamic law: (i) "the certificates must represent ownership in tangible assets, usufruct or services of revenue-generating firms; (ii) payments to investors should come from after-tax profits; and (iii) the value paid at maturity should reflect the current market price of the underlying asset not the original amount invested" (Godlewski et al., 2013, pp. 745-746).

One further Sukuk-related argument that has recently been given much attention is related to the global financial crisis of 2007/08, which intensified the requirement for risk diversification within the financial system. From the time when the global financial crisis hit world economies, risk aversion has been at the centre of attention for investors. Consequently, Sukuk have experienced much prevalence where demand has constantly exceeded supply, particularly with issuances that are backed by robust balance sheets. The Sukuk market is by far the fastest growing segment of the overall Islamic finance industry, even though it has entered the market only relatively recently, in the mid-1990s. As shown in Figure 1, the global Sukuk outstanding volume has grown considerably, with a compound annual growth rate of 20.8 % between 2008 and 2013 and a total amount of USD 294.7 billion in volume as of 3Q 2014. The Sukuk market has been driven by an intensified interest among several sovereign and corporate issuers, in tapping into the Sharia compliant finance liquidity pools,

notably after the global financial crisis. As shown in Figure 2, the average annual Sukuk issuances have exceeded the USD 100 billion milestone in each of the last three years.

This growing trend has also been propelled by several new markets such as the United Kingdom (£200 million issuance), Luxembourg (€200 million issuance) and Hong Kong (USD 1 billion issuance) (IFSB, 2015).

INSERT Figure 1 here

INSERT Figure 2 here

Nevertheless, despite the importance of Sukuk as one of the most significant investment choices confronting Islamic - predominant countries worldwide, evidence against their reliability has accumulated. For example, the criticism of Sheikh Mohammed Taqi Usmani (2007), president of the AAOIFI, that current practices of Sukuk issuances replicate the structure of conventional bonds with regard to their lack of ownership, their right to a fixed return, and their guarantee of repayment of the principal amount; has fuelled the debate regarding the compliance of Sukuk with the principles of Sharia. Consequently, this raises the question whether Sukuk are truly different from conventional bonds and do indeed provide an alternative instrument of financing that may complement them. In addition to such ethical critiques, other more practical critiques, such as those from Miller et al. (2007), Wilson (2008), Chin and Abdullah (2012), and Rahim and Ahmad (2014) claim that Sukuk instruments are generally structured along Western rules of securitization and do not represent promising tools for financial innovation. However, in contrast to these critiques, Cakir and Raei (2007), Alam et al. (2013) and Azmat et al. (2014) take an opposing view on the similarity of Sukuk and conventional bonds. Their counterargument is that Sukuk are distinct from conventional bonds, since they provide diversification benefits in terms of risk-reduction when added to a portfolio of fixed income securities. Similarly, Ramasamy et al. (2011) found that Sukuk seem to be less risky and offer less yield as compared to conventional bonds. Moreover, if such counterarguments are valid, then they would also underline the fact that ethically, Sukuk were indeed close to Sharia law.

Our study goes to the heart of the ongoing debate on Sukuk. Although we leave aside theoretical and structural comparisons, we consider whether in fact Sukuk simply mirror conventional bonds, or are a promising alternative to them. In essence, we ask whether the stock market reacts differently to the issuance of fixed-rate Sukuk as compared to fixed-rate conventional bonds and hence, if there is a difference in the shareholder wealth effect of these two types of issuances. Our study contributes to the seemingly contradictory impacts of Sukuk on the wealth effect in several ways. First, our study sheds light on the novel expansion of Sukuk, adding to a fairly thin research base; very few studies examine the shareholder wealth effect of Sukuk and the difference between conventional bond and Sukuk issuances. To the best of our knowledge, none of these studies compare the shareholder wealth

effects of Sukuk- and conventional bond issuance over a long time period. Furthermore, our study complements itself from the abovementioned few studies by focusing on the difference between fixed-rate Sukuk and fixed-rate conventional bond issuances. Second, our study contributes to the recent debate on the compliance of Sukuk with the principles of Sharia. Finally, the findings of our study are useful to portfolio managers, banks and other financial institutions and individual investors, as they indirectly examine whether Sukuk represent an alternative source of financing.

The remainder of the paper is set out as follows: Section 2 is a brief literature review. Section 3 provides details of the data, models and methodology. Section 4 presents the empirical findings and section 5 concludes.

2. Theoretical Background and Hypothesis Development

2.1. Sukuk Definition and Structure

Sukuk is an Arabic word, which is a plural form of Sakk, meaning Islamic financial certificate” or “order of payment”, similar to a bond in Western finance, but one that complies with Sharia law (McMillen, 2007). The Council of the Islamic Fiqh in 1988 defined Sukuk as “investment instruments which allocate the capital (*mudaraba*) by floating certificates, as an evidence of capital ownership, on the basis of shares of equal value, registered in the name of the owner, as joint owners of shares in the venture capital or whatever shape it may take’ each one’s share therein.” (Saeed and Salah, 2014, p. 46).

Recently, from an Islamic perspective, Sukuk have been considered to consist of asset monetization. In other words, securitization, or *tawreeq*, which is a process whereby the underlying assets’ ownership is transferred to a large number of investors. Sukuk are certificates of equal redeemable value representing an undivided share in the ownership of tangible assets of particular projects or specific investment activities and services (Salah, 2014). Also, the ‘Investment Sukuk’ of May 2003 became effective on January 1st 2004. This was the results of the Sharia Standard No., 17, pp. 61-62 issued by the Accounting and Auditing Organisation for Islamic Financial Institutions (AAOIFI). A definition of Sukuk is given in section 2 of this Sharia Standard as “certificates of equal value representing undivided shares in ownership of tangible assets, usufruct and services or (in the ownership of) the assets of particular projects or special investment activity ...”.

The word Sukuk, representing Islamic securities, is often translated as “Islamic bonds”. However, the term “Islamic bonds” does not completely capture the essence of Sukuk. This is because the term “Islamic bonds” may indicate that Sukuk have both equity and debt features. However, there are different types of Sukuk structures depending on the nature of the underlying asset (Saeed and Salah, 2014). According to Salah (2014), Sukuk structures can be categorised into three basic types based on

the Islamic finance contract applied in the relevant Sukuk transaction: Sukuk al-musharaka (equity-based), Sukuk al-murabaha (sale-based) and Sukuk al-ijarah (lease-based).¹ Equity-based Sukuk were established in the early 1980s, and identified as certificates issued with the goal of using the funds deposited to create a novel project, develop an established project or finance a business activity by virtue of one of the partnership contracts such as *musharaka*, *mudarabah* and *wakalah*. It is worth noting that for this kind of Sukuk the profit-and loss-sharing is maintained until maturity, and also that during this period, these Sukuk are tradable in secondary markets. The second type of Sukuk is sale-based Sukuk, which are issued based on sale contracts like *murabaha*, *salam* or *istisna*. For example, the Sukuk *al-murabaha* starts with an originator seeking to finance the acquisition of a determined tangible property from a third-party seller. Admittedly, the tangible property must be for *halal* motives (consent Islamic law). In other words the tangible property must be unrelated to unethical industries such as gambling, prostitution, drugs, alcohol, and the pornography industry. The third type of Sukuk, which is a lease-based Sukuk (al-Ijarah), is seen as the most popular Sukuk, due to the fact that they provide fixed returns to Sukuk holders (as the Sukuk al-murabaha) as well as the fact that they are tradable in secondary markets (as the Sukuk al-musharaka). These two aforementioned elements make lease-based Sukuk both a viable alternative to conventional bonds and attractive for investors seeking for Sharia-compliant fixed income securities. The contract of *ijarah* establishes the foundation of lease-based Sukuk. Tangible property, which is entitled for leasing, such as aircraft, buildings, land, vehicles or equipment, are often used as the underlying property of the Sukuk transaction.²

2.1.1. Development of the Sukuk Industry

The recognition and trading of Sukuk by Muslim communities in the early years of Sukuk was in the forms of papers that reflected the financial obligations developed from trade and other forms of key commercial activities. In addition, Sukuk were used to present written instruments of credit and theoretical legal works in *genizah* records. For example, the Cairo *genizah* records include key documents that represent the existence of Sakk in the 12th century CE. At times, Sukuk were referred to as money orders, which is remarkably similar in form to current contemporary cheques. These forms of Sukuk settled and stated the whole amount to be paid, as well as the name of the issuer, the order, and the date.

Throughout the transitional or middle age, a Sakk was a registered vow, or oath, to repay for goods when they were delivered. Indeed, it was adopted to avoid money having to be transported across unsecured forms of assets. Consequently, Sukuk were traded across several countries and spread

¹ While Sukuk *al-ijarah* is mostly adopted when Sukuk relate to a partial ownership of an asset, Sukuk *murabaha*, Sukuk *al-istisna*, Sukuk *al-musharaka* and Sukuk *al-istithmar* are related to partial ownership in debt, project, business and investment respectively.

² According to Article 3 AAOIFI SS 17, there are five different forms of lease-based Sukuk: “(1) Sukuk *alijarah* that represent ownership in a (leased) tangible property; and Sukuk *manfaa-ijarah*, which represent the right of using the original tangible property and divided into (2) Sukuk associated with the right of using current tangible property; (3) those associated with the right of using future tangible property; (4) Sukuk related to services of a specified party; and (5) those associated with identified future services” (Salah, 2014, p. 68).

throughout the globe. For example, the Jewish traders and investors who been travelling to the predominantly Muslims countries transported the term Sakk to Europe. In addition, the trade and transport of these Sukuk has been functioning as a source of inspiration for the contemporary cheque. Despite the fact that the cheque has a British background, the contemporary Western word “cheque” appears to have been established from the Arabic word *sakk* (Saeed and Salah, 2014). In 1990, Shell MDS issued one of the very first Sukuk in Malaysia. The subsequent period was characterised by an inactive trading of Sukuk until the beginning of the 21st century. Over the first decade of the 21st century the market witnessed several Sukuk issuances in different forms and structures. Since 2001, a greater number of entities such as government and corporations have started issuing Sukuk and hence establishing the Sukuk market (Saeed and Salah, 2014).

Overall therefore, the global Sukuk market has boomed from 2001 to 2013, arguably as a result of political and economic improvements across the country. During this time, the Sukuk industry grew by 27.8%, from US\$14.8 billion in 2001, to US\$281.3 billion in 2013. According to Godlewski et al., (2011) Malaysia dominates the Sukuk market, accounting for approximately 75% of total issues, and has remained the largest Sukuk market. Malaysia has registered 58.1% of the total outstanding Sukuk followed by the Middle East, which represents an approximate 30% of the total investments in Sukuk worldwide. Other emerging East Asian markets (excluding Malaysia) have registered 6%. While Malaysia continues to dominate the local currency (LCY) - Sukuk market, the markets placed in the Middle East are the most active issuers of foreign currency (FCY) - Sukuk (AAOIFI; Salah 2014; Godlewski, 2011).

Recently, the global financial crisis has brought the Islamic financial services and products, in particular Sukuk, into the spotlight for a number of western countries. Regulatory proposals in the aftermath of the crisis have singled out the Sukuk market as one of their main targets. For example, according to the UK's foreign office minister for Middle East, London is bidding to become a leading centre for Sharia-compliant finance, retaining its role and setting its sights on becoming the world centre for the Islamic finance and Sukuk industry. The sovereign Sukuk market, which makes up only 0.1pc of global financial assets, is predicted to expand by 20pc a year, according to Robert Gray, chairman of debt finance at HSBC (Miller et al., 2007). Recent UK legislation has been designed to treat Sukuk as conventional bonds by providing tax treatments for Sukuk equivalent to those for similar financial products. Recently, we have observed two issues signalling a broadening in the acknowledgment and significant recognition of Sukuk outside the Islamic world (Godlewski, 2013).

The first issue was to raise money for general corporate and balance sheet purposes by issuing US-based GE Capital's 5-year \$500 million Sukuk. The second issue was to increase funding for development activities in emerging markets, including the MENA region, by issuing oversubscribed 5-year Aaa-rated \$100 million Sukuk of the International Finance Corporation (IFC), which was

jointly arranged by HSBC, Dubai Islamic Bank and Kuwait Finance House-Bahrain. This indeed signalled and demonstrated that the World Bank, one of the leading international institutions, acknowledged the importance of Sukuk as a financing tool (Godlewski, 2011).

2.1.2. Are Sukuk that different from conventional bonds?

Overall, Sukuk are perceived as a *Sharia*-compliant bond, which symbolize and identify ownership of an asset or its usufruct, and thus represent an ownership claim rather than cash flow claim. Whereas Sukuk are investment certificates consisting of ownership claims in a pool of assets, conventional bonds proceed over interest bearing securities (Salah, 2014). Table 1 below shows the differences between Sukuk and conventional bonds.³

INSERT Table 1 here

2.2 Literature Review

Significantly, there has been a long running debate on the issuance effects of different types of conventional bond offerings on shareholder wealth. For example, Eckbo (1986) investigated the stock market valuation effect of leverage-increasing corporate debt issues, encompassing both convertible and non-convertible debt. Eckbo (1986) found that straight bond offerings are associated with insignificantly non-positive effects on the firm's share price. In contrast, convertible bond offerings and public utility mortgage bond have a significant negative impact on the corresponding firms share price.

Similarly, Stephen and Ward (1996) examine the stock price reaction to the announcement of high-yield straight bond issues. Using a sample of 164 bond issues, they demonstrated that the AARs are statistically not significantly different from zero on day +2. In addition, they indicated that the stock market does not react differently for the high-yield bond issues that default, as compared to those that do not default. Further, they investigated the impact of bond characteristics on the announcement-induced ARs and suggest that announcement-period ARs are neither positively nor negatively related to issue year, bond rating, issue size, underwriter, takeover activity or past high-yield debt issue experience. This finding contradicts the models developed by Myers and Majluf (1984), Miller and Rock (1985), Krasker (1986) and Jensen (1986), who find a negative stock price effect of bond issues. However, the findings of Stephen and Ward indicate no statistically significant relation between the announcement of high-yield straight bonds and the corresponding share price.

In the same vein, using 937 straight bonds over the period 1983 to 1993, Howton et. al (1998) attempted to test Jensen's (1986) free cash flow statement on straight bond issues and their results

³ It was usually referring to the Islamic equivalent of bonds as Sukuk, which differ remarkably from conventional bonds in that the Sukuk provides the investor with a share of an asset as well as the corresponding cash flows and risk. Consequently, ethical bonds or Sukuk adhere to Islamic laws or Sharia principles, which prohibit the payment of interest.

indicated that the market reacts significantly negatively to the issuance of straight bonds. In addition, they found that the market's reaction to straight bond announcements is directly associated with the issuing company's level of free cash flow prior to the bond issue, while the issuing company's investment opportunities, as proxied by the marginal q , are inversely related.

In a related study, using 260 public bond offerings created by the non-U.S. companies in the U.S. bond market, Miller and Puthenpurackal (2002) examined the costs, the shareholder wealth effects and the determinants of international fund raising. They found evidence to support the argument that the issue of Yankee bond offerings creates a significantly positive wealth effect for the issuing company's shareholders, and that AARs are found to be the highest for the first-time Yankee bond seller.

In another key study, Martel and Padron (2006) investigated the informative content of straight bond offering announcements on the Spanish stock market for a sample of 67 straight bonds covering the period of 1989-1998. They examined the stock price reaction to both the abovementioned announcements as well as the substitution effect existing between debt and dividends. They reported a significantly positive wealth effect for companies associated with relatively low dividend payouts following straight debt issue announcements. However, they found that the Spanish market does not react to the abovementioned announcements when these are made by high dividend payout companies.

Furthermore, Suchard and Singh (2006) found that among non-equity announcement offerings, the stock market reacts most negatively to the announcement of convertible debt issues, followed by convertible preference shares. In comparison, the announcement-period ARs of both straight debt and preference share issues are, in general, insignificantly different from zero.

In addition, Shao et al. (2007) investigated the importance of investment opportunities and free cash flow as an explanatory variable in the origin of the stock valuation effects of secured debt issues. They found an insignificant positive relationship between a company's investment opportunities and its share price reaction to announcements of secured debt offerings, implying that secured debt, as a financing tool, is more beneficial to firms that have relatively high growth opportunities.

In another recent study, Chin and Abdullah (2012) adopted an event study methodology as well as a multiple regression analysis to examine the effect of bonds on the issuing firms' stock market behaviour. Using 100 bond issue announcements made by publicly listed non-financial companies in Malaysia over the period of 2000 to 2007, they reported a significant increase in the stock returns of the corporate bond issuers during the event windows $[-10, -1]$ and $[+1, +10]$, implying that an increase in the level of debt has a positive impact on stock prices. For the multiple regression analysis, they found insignificant impact of the following firm characteristics on the cumulative abnormal return

(CAR): profitability, asset tangibility, growth opportunities, company size and managerial ownership. Interestingly, they provide evidence supporting the existence of a signalling effect of corporate bond issuance announcements, which is not determined by company characteristics.

Another strand of recent literature has placed emphasis on the impact of Sukuk Issuance on shareholder wealth. Although Sukuk have witnessed a wide expansion in Islamic finance in recent years, there are only a handful of studies that have investigated its effect on shareholder wealth. One example is the study by Modirzadehbami and Mansourfar (2011), who used a sample of 45 Islamic debt announcements made by companies listed on the Kuala Lumpur Stock Exchange for the period of 2005-2008. They investigated the information contents of Islamic private debt issues reflected in stock prices. They found that on average, companies experience negative AAR from day -2 to day 2, and negative CAAR during the event windows $[-1,1]$, $[-1,0]$ and $[0,+1]$. However, the t-statistics are statistically significant at the 5% level of significance for AAR one-day prior to the announcement. This implies that the information about Islamic debt offerings appears to leak out to the public ahead of the announcement. Overall, they claimed that the announcement of Islamic private debt offerings has a negative impact on the corresponding stock price, and also that Islamic bonds have more equity-like features than bond-like features.

Similarly, Ahmad and Rusgianto (2013) examined the information content of post-crisis Islamic bond announcements in Malaysia over the period of 2009-2010. Using event study methodology and the FTSE Bursa Malaysia KLCI (FBMKLCI) as a proxy for market return, they investigated CAARs using three event windows $[0, 0]$, $[-1, +1]$ and $[-2, +2]$. Their findings indicated that the shareholder wealth effect of post-crisis Islamic bond announcements is positive across all event windows. However, the t-statistics were not statistically significant, implying that shareholders are indifferent to post-crisis Sukuk announcements. This finding suggests that Sukuk, being perceived neither as debt nor as equity within the investor universe, reflect the economic power of the firm and real economic activities. In addition, Ahmad and Rusgianto highly recommended future research to test for asymmetric responses to different types of Sukuk issues.

Recently, the global financial crisis has brought Sukuk into the spotlight. For example, Rahim and Ahmad (2014), in Malaysia, investigated whether various announcements of Sukuk issues conveyed any information relevant for pricing the stocks in the period of 2004 to 2011. They argued that the stock market reacted significantly positively to Sukuk issue announcements prior to the crisis, but significantly negatively during and after the crisis. In the same line, Ahmad and Rahim (2014) investigated whether the stock market reacts differently to the issuance of Sukuk, using sectoral issuance for the period of 2004-2011. The three sectors considered were services, construction and industrial products. They suggested that the market response to service sector announcements in asymmetric events tends to be significantly positive. Further, they demonstrated that the service sector

has experienced a growth in issuances and even has the highest number of issuances in the post-crisis period, implying that Sukuk issuers are dominated by the services sector due to these sectors having a higher positive impact on shareholder wealth.

Elsewhere, Elia and Young-Taft (2014) examined the effect of corporate Sukuk offering announcements on stock returns for four Gulf Cooperation Council (GCC) exchanges, namely Kuwait, Saudi Arabia, the United Arab Emirates and Bahrain, covering the period of 2004-2012. Their findings suggest the absence of significantly positive ARs around the announcement period. In contrast, the Sukuk offering announcement was found to have a negative impact on shareholder wealth by estimating the AAR one-day before the announcement. However, CAAR p-values for both the z-test and t-test show insignificant findings for both symmetric and asymmetric event windows before and after the announcement dates. This implies that there is no wealth effect of Islamic bond offering announcements on the GCC stock markets. Elia and Young-Taft attributed this to the smaller investor base for Sukuk in the GCC region, implying lower cost advantages which in turn lead to higher cost of capital.

Similarly, based on a sample of 45 companies in Malaysia for the period 2009-2011, Rahim and Ahmad (2015) investigated whether the stock market reacts asymmetrically to the issuance of Sukuk after the recent 2008 global financial crisis, by estimating CAARs for both symmetric and asymmetric events. They found significantly positive symmetric and asymmetric market reactions surrounding the actual issue date of Sukuk. According to Rahim and Ahmad (2015) these findings are attributable to the following reasons: first, the market is able to differentiate news and second, market participants are confident that the issue of Islamic debt offerings will lead to an increase in shareholder wealth. The latter is because Sukuk, being neither debt nor equity, are true to the rules of Islamic economics, whereby the issuance is associated with the economic strength of the corporation and real economic activities.

One further argument that has recently been given much attention is related to the differences between conventional bonds and Sukuk in terms of stock market perspective. There is less empirical evidence on the differences between conventional bonds and Sukuk issuances with regard to stock market reactions and shareholder wealth effects. For example, Ashhari et al. (2009) analysed the impact of Sukuk and conventional bonds announcements on the corresponding stock prices made by listed firms on the Bursa Malaysia Stock Exchange covering the period 2001-2006. Using event study methodology with beta refinement using Blume's method, their results showed that on average the Malaysian stock market reacts positively to the announcement of Sukuk, which is in contrast with the announcement of conventional bonds.

In another study, Ibrahim and Minai (2009) examined the shareholder wealth effect of Sukuk announcements and their determinants. They found that Malaysian stockholders react significantly positively during the event windows $[-3, 3]$ and $[-3, 0]$ following the announcement of Sukuk issue over the period 2000-2006. This implies that the offering of Sukuk by Malaysian firms benefits its corresponding stockholders through wealth increase. Conversely, no significant ARs are reported for the announcement of conventional bond issuance. In addition, Ibrahim and Minai (2009) found that the wealth generated from Sukuk issue announcement is higher than that of conventional issuances. This finding is attributable to the cost advantages associated with a lower cost of capital of Islamic debt securities as compared to conventional debt securities. For the cross-sectional regression analysis adopted to explain the sources of wealth creation in the case of Sukuk announcements, they found that the issuer's investment opportunity is statistically positively related to the CAR, while firm size, issue size and SC approval status adversely influence the cumulative abnormal return CAR. In consistency with conventional bonds, they argue that their finding of positive market reaction is not linked to the investor's preference for *Sharia* compliant activities.

Similarly, Godlweski et al. (2013) used event study methodology and market model to examine the differences in CAARs and CASARs between Sukuk and conventional bond events for Malaysian listed companies over the period of 2002-2009. Overall, their findings indicate that shareholders are indifferent to announcements of conventional bond issuance, but that they react significantly negatively to announcements of Sukuk issuance. Godlweski et al. (2013) attribute this finding to the surplus demand of Islamic debt offerings from Islamic banks, as well as to an adverse selection mechanism that claims that Sukuk are issued mostly by lower-quality debtor firms. In another study, Alam et al. (2013) investigated the comparative wealth effect of the announcement of conventional bonds and Sukuk as well as their determinants. They used 87 conventional bonds and 79 Sukuks during the period of 2004 to 2012 in six developed Islamic financial markets, namely Malaysia, Indonesia, Pakistan, Bahrain, the United Arab Emirates and Qatar. The overall study period is further divided into three sub-samples: 2004-2006 (pre-crisis period); 2007-2009 (during crisis period) and 2010-2012 (post-crisis period). The stock market reaction was found to be significantly negative in response to the announcement of Sukuk during the global financial crisis period, while the stock market response was significantly positive to Sukuk issuances in the post-crisis period. With regard to conventional bond announcements, the stock market reaction was found to be significantly negative during the global financial crisis. However, there was a lack of significant market reaction to both conventional bond and Sukuk announcements over a longer time period.

2.3. Hypotheses Developments

Previous studies on the shareholder wealth effects of conventional bond issuance offer mixed evidence in different markets. For example, Eckbo (1986), Stephen and Ward (1996), and Suchard

and Singh (2006) all concluded that there is no significant wealth effect derived from the announcement of conventional bond issuance. These findings contradict the theories developed by Myers and Majluf (1984), Miller and Rock (1985), Krasker (1986) and Jensen (1986), who assume a negative stock price effect of bond issues. In agreement with the theory, however, Howton et al. (1998) reported a negative and significant stock market reaction to the announcement of straight debt issues. In contrast, Miller and Puthenpurackal (2002), Martel and Padron (2006) and Chin and Abdullah (2012) found evidence that the issuance of new debt has a significantly positive impact on the issuing firms' stock prices. These findings are further supported by the theories of Miller and Modigliani (1963), Ross (1977), and Leland and Pyle (1977).

With regard to Sukuk issuance, there is not much evidence on the effect of Sukuk issuance over a longer time frame, and the existing evidence is conflicting and inconclusive. For example, Elia and Young-Taft (2014) found that the issue of Sukuk has insignificant impact on the stock market. Whereas Modirzadehbami and Mansourfar (2011) as well as Godlewski et al. (2013) report significantly negative results, Ahmad and Rahim (2014) reported significantly positive results. To the best of our knowledge, none of these previous studies provide empirical evidence on the difference between conventional bond and Sukuk issuances over a longer time frame, thereby covering both the pre-crisis and the post-crisis period. It is worth noting that Godlewski et al. (2013) conclude that the stock market reacts differently to the issuance of Sukuk as compared to conventional bonds in the short time frame. However, the main argument brought forward in the present study, is that fixed-rate Sukuk are not Sharia-compliant. Based on the arguments provided above, we favor the argument that there are no differences between Sukuk and conventional bond issuances. Hence, the first hypothesis (H1) can be stated as follows:

H1: There is no significant difference in the Malaysian stock market reaction to fixed-rate Sukuk- as compared to fixed-rate conventional bond issuances during the period 2000 through 2015.

Very few studies have investigated the difference in stock market reaction to Sukuk- and to conventional bond issuances in the pre-crisis period. In one example, Ibrahim and Minai (2009) suggest that the stock market reacts differently to the issuance of Sukuk as compared to conventional bonds. While there is no significant market reaction to the issuance of conventional bonds, there is a significantly positive stock market reaction to Sukuk issuances during the pre-crisis period. Similarly, Godlewski et al. (2013) found a significant difference of CAARs between Sukuk and conventional bond issuances, implying that stock markets react differently to issuances of both securities. Additionally, Ashhari et al. (2009) findings show that, on average, the Malaysian stock market reacts positively to Sukuk announcements, while it remains indifferent to the announcement of conventional bonds during the pre-crisis period. In the same vein, Alam et al. (2013) suggest the absence of any significant market response to both Sukuk and conventional bond announcements during the pre-crisis

period. Indeed, resonant of this, the main argument in our study is that fixed-rate Sukuk have more bond-like features rather than being neither debt nor equity. Based on the above discussion, the second hypothesis (H2) is stated as follows:

H2: There is no significant difference in the Malaysian stock market reaction to fixed-rate Sukuk- as compared to fixed-rate conventional bond issuances before the global financial crisis (2000-2007).

To date, very little research has been undertaken with regard to the difference in shareholder wealth effect of post-crisis Sukuk- and conventional bond issuances. For example, Alam et al. (2013) report that the issuance of Sukuk during the post-crisis period is associated with an increase in shareholder stock return, whereas the issuance of conventional bonds has no significant impact on the stock market. Further, Rahim and Ahmad (2015) report that the issuance of Sukuk during the post-crisis period is associated with an increase in shareholder's stock return. Given the fact that recent studies provide evidence on the presence of a significant positive shareholder wealth effect regarding the issuance of Sukuk and no significant wealth effect on conventional bond issuance for the post-crisis period, our next testable hypothesis (H3) is formulated as follows:

H3: There is a significant difference in the Malaysian stock market reaction to fixed-rate Sukuk as compared to fixed-rate conventional bond issuances after the global financial crisis (2010-2015).

3. Data and Research Methodology

3.1. Data

The data in this study spans the period January 2000 - May 2015. The data on Sukuk and conventional bond issuances was obtained from the Thomson ONE Banker database.⁴ A sample of 205 conventional bond issuances, and of 255 Sukuk issuances was obtained. Data on the characteristics of both issuances including the coupon rate, the issue price, the maturity and the macro description were also collected from Thomson ONE Banker database. All variable amounts were only available in millions of US Dollars, with the exception of coupons (percent), issue prices (percent) and maturities (years). In order to avoid a currency effect, all the requested variables for the multivariate analysis were converted and presented in the Malaysian Ringit from DataStream. The data on closing stock prices (Total Return Index⁵ RI) of the companies that issued Sukuk or conventional bonds and data on chosen market indices were obtained from the DataStream. We used RI to obtain a more precise measurement because unadjusted closing share prices did not account for "stock split", "dividend

⁴ Following Rajan and Zingales (1995), De Jong et al. (2008) and De Miguel and Pindado (2001), we exclude the financial sector, including banks and insurance companies due to the different accounting categories and rules used in these companies.

⁵RI shows a theoretical growth in value of a share holding over a specified period, assuming that dividends are re-invested to purchase additional units of an equity or unit trust as the closing price applicable on the ex-dividend date.

pay”, “re-purchase” and “right issue”.⁶ The final sample comprised 122 Sukuk- and 87 conventional bond issuances, which was due to stock price data unavailability for a time span sufficiently long enough before the issue date and after an elimination of the contamination of other corporate events that could also have influenced the CAR and caused multiple issue problems. Further, we divided our sample into three subsamples: overall period, pre-crisis period and post-crisis period. Table 2 presents the main variables used in our study.

INSERT Table 2 here

3.2. Research Methodology

In order to be consistent with earlier studies in this area, Brown and Warner’s (1985) standard event study methodology was adopted to calculate the abnormal returns.⁷ The employment of an event study is considered highly reasonable because, given that the capital market is a “semi-strong form efficient”, the stock prices will instantaneously reflect the impacts of the event (MacKinlay, 1997). Thus, the economic effect of certain events can be estimated over a shorter time period as compared to alternative methodologies such as the buy-and-hold abnormal return (BHAR) approach and the calendar time (CTIME) approach, which focus on identifying whether certain events influence stock prices over longer time periods, i.e. several months or even years (Dutta, 2014).⁸ Short-term event studies can be conducted using all kinds of normal return models such as the constant-mean return model, the CAPM, multi-factor models such as the Fama and French (1993) and the Carhart (1997) models, as well as by matched portfolios, as proposed by Lyon, Barber and Tsai (1999). This study ruled out multi-factor models for two reasons. First, the recent findings obtained by Athern (2009) suggest that findings are only vaguely sensitive to the kind of identifications adopted to calculate returns, and that simple models are more appropriate. Second, the execution of multi-factor models demands information on firm characteristics, which is only obtainable in a limited scope. Following the literature⁹, a market model approach that assumed a constant and a linear relation between individual stock returns and the return on the market index was adopted:

$$R_{i,\tau} = \alpha_i + \beta_i R_{m,\tau} + \varepsilon_{i,\tau} \text{ with } E[\varepsilon_{i,\tau}] = 0 \text{ and } VAR[\varepsilon_{i,\tau}] = \sigma_{\varepsilon_i}^2 \quad (1)$$

where $R_{i,\tau}$ is the return on the stock price of issuer i on day τ , $R_{m,\tau}$ the stock market return on day τ , $\alpha_i + \beta_i$ are the model parameters to be estimated over a chosen estimation window and $\varepsilon_{i,\tau}$ is the

⁶ We use daily data cos it lowers the chance of other corporate news being included in the effect (Martel and Padron, 2006). Similarly, Kothari and Warner (2006) indicate that the use of daily, rather than monthly data allows a more accurate measurement of abnormal returns as well as more instructive studies of event effects.

⁷ For more details on event study methodology and issue dates see for example Kapoor and Pope (1997) and Chen et al. (2005).

⁸ Unlike in most previous studies, the issue date is used instead of the announcement date. According to Thomson ONE Banker, the issue date is defined as the pricing date of the issue.

⁹ See, for instance, Ashhari et al. (2009), Modirzadehbami and Mansourfar (2011) and Rahim and Ahmad (2014).

error term.

The raw return of a stock is identified as:

$$R_{\tau} = \frac{P_{(\tau)} - P_{(\tau-1)}}{P_{(\tau-1)}} \quad (2)$$

where R_{τ} is the return at time τ , $P_{(\tau)}$ is the daily closing stock price (RI) at time τ and $P_{(i,\tau-1)}$ is the daily closing stock price at time $\tau - 1$.

The five market indices used as a proxy for market returns were the FTSE Bursa Malaysia EMAS¹⁰; the FTSE Bursa Malaysia KLCI¹¹; the FTSE Bursa Malaysia Top 100¹²; the FTSE Malaysia¹³ and TR Malaysia L¹⁴. The benchmark-adjusted abnormal return (AR) of stock i is the difference between daily raw return ($R_{i,\tau}$) and the expected return on day τ . Therefore, $AR_{i,\tau}$ is identified using ordinary OLS regressions and an estimation window ranging from 181 days to 61 days prior to the event date as:

$$AR_{i,\tau} = R_{i,\tau} - E(R_{i,\tau} | \Omega_{i,\tau}) \quad (3)$$

where $R_{i,\tau}$ is the actual return on the stock price of issuer i on day τ , whereas $E(R_{i,\tau} | \Omega_{i,\tau})$ is the expected return on day τ that is unconditional on the event, but conditional on a separate information set.¹⁵

The CAR is consequently calculated using the following formula:

$$CAR_i(\tau_1, \tau_2) = \sum_{t=\tau_1}^{\tau_2} AR_{i,t} \quad (4)$$

where τ_1 and τ_2 are the lower and upper bounds of an event window respectively.

Following MacKinlay (1997), the CARs are aggregated over time and across stocks in order to draw general inferences concerning the event. Thus, CAARs are measured as follows:

$$CAAR(\tau_1, \tau_2) = \frac{1}{N} \sum_{i=1}^N CAR_i(\tau_1, \tau_2) \quad (5)$$

where N is the number of issuers in the sample.

To test whether the CAARs are significantly different from zero on a statistical basis, both parametric and non-parametric tests are employed.

¹⁰ This index contains the constituents of the FTSE Bursa Malaysia Top 100 Index and the FTSE Bursa Malaysia Small Cap Index.

¹¹ This index contains the 30 largest companies by full market capitalization on the Bursa Malaysia Main Board.

¹² This index contains the constituents of the FTSE Bursa Malaysia KLCI and the FTSE Bursa Malaysia Mid 70 Index on the Bursa Malaysia Main Board.

¹³ This index is a part of the FTSE Emerging series under the FTSE All World Index.

¹⁴ This index is a market capitalization-weighted index of free float.

¹⁵ We use 14 different event windows, considering an event window of 60 days before the issuance to 60 days after the issuance date. This concerns five symmetric event windows (1-day [0,0], 3-day [-1,+1], 5-day [-2,+2], 7-day [-3,+3], and 121-day [-60,+60] windows) and 9 asymmetric ones (4-day [-1,+2], 4-day [-2,+1], 5-day [-3,+1], 62-day [-60,-1], 62-day [+1,+60], 12-day [-10,-1], 12-day [+1,+10], 22-day [-20,-1], 22-day [+1,+20] windows). There is no consensus with regard to the ideal length of the event window. However, Chin and Abdullah (2012) concluded that 60 days is an adequate period for examining the effect of any event on the stock price. A weakness of past studies is the application of shorter event windows, ranging from 1 to 20 days before and after the event (Chent et al., 2005; Martel and Padron, 2006).

For parametric tests, the conventional t-test for $CAAR(\tau_1, \tau_2)$ is estimated as:

$$t - \text{statistic} = \frac{CAAR(\tau_1, \tau_2)}{\hat{\sigma}_{CAAR(\tau_1, \tau_2)}} \quad (6)$$

where $\hat{\sigma}_{CAAR(\tau_1, \tau_2)}$ is the standard deviation of $CAAR(\tau_1, \tau_2)$ over the estimation window. Under the null hypothesis, $CAAR(\tau_1, \tau_2)$ is equal to zero.

The standardized residual test advocated by Patell (1976) assumes that ARs are uncorrelated, and that variance is constant over time, implying that this test is robust with regard to heteroscedastic event-window ARs. The standardized residual test statistic for the null hypothesis of no abnormal performance is then identified as:

$$T_{\text{Patell}} = \frac{1}{\sqrt{N}} \sum_{i=1}^N \frac{CSAR_i(\tau_1, \tau_2)}{S(CSAR_i)} \quad (7)$$

where $CSAR_i(\tau_1, \tau_2)$ is the cumulative standardized abnormal return defined in equation (9) and $S(CSAR_i)$ is the standard deviation of $CSAR_i$ defined in equation (10):

$$CSAR_i(\tau_1, \tau_2) = \sum_{t=\tau_1}^{\tau_2} \frac{AR_{i,t}}{S(AR_i)} \quad (8)$$

$$S(CSAR_i) = \sqrt{(\tau_2 - \tau_1 + 1) \frac{Mi-d}{Mi-2d}} \quad (9)$$

The standardized cross-sectional test developed by Boehmer et al. (1991) combines the standardized residual test with an empirical variance estimate. It is based on the cross section of event window ARs, which is robust to event-induced variance increases of share returns.

Consequently, the standardized cross-sectional test statistic for the null hypothesis of the absence of abnormal returns is given as:

$$T_{\text{Boehmer et al.}} = \frac{\overline{CSAR}(\tau_1, \tau_2)}{S(\overline{CSAR})} \quad (10)$$

where the cross-sectional average of $CSAR_i(\tau_1, \tau_2)$ is calculated as equation (11) and the standard deviation of $\overline{CSAR}(\tau_1, \tau_2)$ is calculated from the cross section of event widow ARs as equation (12):

$$\overline{CSAR}(\tau_1, \tau_2) = \frac{1}{N} \sum_{i=1}^N CSAR_i(\tau_1, \tau_2) \quad (11)$$

$$S(\overline{CSAR}) = \sqrt{\frac{1}{N(N-1)} \sum_{i=1}^N [CSAR_i(\tau_1, \tau_2) - \overline{CSAR}(\tau_1, \tau_2)]^2} \quad (12)$$

The non-parametric rank test suggested by Corrado (1989) transforms CARs into ranks stock-by-stock for the time period encompassing both the estimation and the event window:

$$K_{i,\tau} = rank(CAR_{i,\tau}) \quad (13)$$

where tied ranks are handled by the approach of mid-ranks.

Following Corrado and Zivney (1992), a uniform transformation of ranks is adapted in an effort to adjust for missing values:

$$U_{i,\tau} = \frac{K_{i,\tau}}{(1+M_i)} \quad (14)$$

where M_i is the number of non-missing returns for each stock.

The Corrado rank test statistic for the null hypothesis that the CAAR is equal to zero is identified as:

$$T_{Corrado} = \frac{1}{\sqrt{N}} \sum_{i=1}^N (U_{i,\tau} - 0.5) / S(U) \quad (15)$$

where the standard deviation of uniform transformation $S(U)$ is defined as:

$$S(U) = \frac{1}{L_1+L_2} \sum_{\tau} \left[\frac{1}{\sqrt{N_{\tau}}} \sum_{i=1}^{N_{\tau}} (U_{i,\tau} - 0.5) \right]^2 \quad (16)$$

where N is the number of non-missing returns at day τ .

As a further test, the Student, the Wilcoxon/Mann-Whitney, and the Kruskal-Wallis tests were performed, in order to investigate if the stock market reaction differs significantly with regard to fixed-rate Sukuk as compared to fixed-rate conventional bond issuances. For the Student test, the null hypothesis is that the difference of CAARs between fixed-rate Sukuk- and fixed-rate conventional bond events is zero. For the other two tests, the null hypothesis is that the fixed-rate Sukuk- and the fixed-rate conventional bond event samples have the same general distribution.

To test the robustness of the results obtained by means of the univariate analysis, regressions of the CARs based on a sample of 87 Sukuk and 61 conventional bond issuances for the overall period were conducted. The reason for the lower sample size was that each firm is included in the sample only once. It is quite common for firms to issue debt several times during one year or even during one day. In cases of multiple yearly issues, the issue with earliest date was included. In cases of multiple daily

issues only the issue with the highest coupon and maturity date was included. The dependent variable is the CAR computed using the event window [-2, +2] and the market model.

The main independent variable is the dummy variable for Sukuk, which is 1 if the issue is a Sukuk or 0 otherwise.¹⁶ Following Godlewski et al. (2013), we check for issue-specific and issuer-specific characteristics as well as for industry effects using the following regression model:¹⁷

$$CAR_i = \alpha + \beta * Sukuk + Controls + \varepsilon_{it}^{18} \quad (17)$$

To ensure the absence of multicollinearity, a Pearson Correlation Matrix was performed (Table 3) which shows no multicollinearity present in the data. Table 4 presents the independent variables used in the above regression model as well as of the expectations with regard to the nature of the relationship between anticipated variables and bond issuance-induced CARs.

INSERT Table 3 here

INSERT Table 4 here

4. Empirical Findings

4.1. Descriptive statistics

We begin our analysis by reporting the summary statistics. Table 5 includes the mean, standard deviation, minimum, median, and maximum of conventional bond and Sukuk. As can be seen from Table 5, the average amounts borrowed and received by conventional bond issuances were slightly higher than those associated with Sukuk issuances. On average, the maturity of Sukuk issuances was almost twice as long as of conventional bonds issues (117 months vs. 66 months, respectively). This implies that these financial securities provide higher total returns with regard to current yield and capital gains, as well as higher investment risk. However, the findings indicate that the average fixed coupon rate on Sukuk was only slightly higher than for conventional bonds (5.36% vs. 5.29%) and that fixed-rate conventional bonds in Malaysia are issued at a deeper discount as compared to fixed-rate Sukuk (99.76% vs. 99.97% of par), thus indicating a greater capital appreciation potential for bondholders. This provisional ascertainment is interesting given that fixed-rate Sukuk are not

¹⁶ Outliers within the dependent and independent variables were identified by plotting the variables against the unstandardized residuals. In order to mitigate the effect of these extreme values, which can affect the regression result dramatically, the outliers were transformed instead of deleted. Hence, the sample was winsorized at a level of 10%.

¹⁷ Data for issuer characteristics is extracted from the DataStream one year prior to the bonds issuance. This is in line with the methods applied in past studies such as Pandey (2004), Guha and Kar (2006) and Chin and Abdullah (2013). Table 4 provides a detailed description of the independent variables used in this regression model as well as our expectations with regard to the nature of the relationship between anticipated variables and bond issuance-induced CARs.

¹⁸ The equation (18) was estimated using OLS with heteroscedasticity-consistent standard errors HAC (Newey-West) in order to overcome the problem of autocorrelation and heteroscedasticity.

associated with higher investment risk as compared to their conventional benchmark, notwithstanding their longer maturity. It can be inferred that Sukuk-issuing firms are, similarly to conventional bond issuers, keen on returns, regardless of Sukuk's longer maturity. In general, the findings suggest no significant difference in the total returns composition, and hence in investment risk, by bond type. There is only a significant difference in the maturity of the issuances.

INSERT Table 5 here

For the characteristics of issuers of Sukuk and conventional bonds, Table 6 presents descriptive statistics by issuer type and shows that the firms that were used to issue Sukuk tend to be smaller than the firms issuing conventional bonds in terms of balance sheet assets. In addition, there is no high difference in the equity to assets ratio of these two issuer types, indicating that both issuers are similarly indebted and hence exposed to similar financial risk. On the other hand, the average interest coverage ratio (EBIT to interest expense on debt) of conventional bond issuers is significantly higher than that of Sukuk issuers (21.67 vs. 10.82). This finding implies that, on average, conventional bond issuers perform better and face less solvency problems than Sukuk issuers. Furthermore, all profitability ratios stated in Table 6 suggest that firms issuing conventional bonds experience a better financial and operating position than firms raising funds through Sukuk. Nevertheless, the achieved profitability ratios do not indicate poor financial and operating positions for Sukuk issuers. Indeed, these results show that Sukuk issuers also have a strong financial profile. For the statistically significant differences in the characteristics of the issuers of Sukuk and of conventional bonds, we find that firms that were used to issue conventional bonds are more profitable and have more interest expense on debt than those issuing Sukuk.¹⁹

INSERT Table 6 here

4.2. Univariate analysis

Now we move on the results of the univariate analysis. Table 7 presents the CAAR estimations, which were obtained using a market model and the FTSE Bursa Malaysia EMAS index as a proxy for market return. Table 8 presents the results of the Student, the Wilcoxon/Mann-Whitney and the Kruskal-Wallis tests for the difference between CAARs. Panel A of Table 7 shows that the Malaysian stock market reaction for the overall period is found to be positive to the issuance of Sukuk in most

¹⁹ However, it cannot be concluded that firms issuing Sukuk are in a worse financial state and could be labelled as low quality borrowers.

event windows. The symmetric event windows $[0,0]$, $[-2,+2]$ and $[-3,+3]$, and the asymmetric event windows $[-1,+2]$, $[-2,+1]$, $[+1,+10]$ and $[1,+20]$ show significant and positive results according to either one or two statistical tests. However, only the CAAR at 0.28% for the short symmetric event window $[0,0]$ was found to be significantly different from zero across all three applied statistical tests. Given the fact that only 1 out of 14 event windows are robust with regard to all the applied statistical tests, it seems fairly reasonable to suggest no strong evidence for a shareholder wealth effect of Sukuk issuance. Also, Panel *A* of Table 7 shows that for most event windows, CAARs are positive for conventional bond issuances for the overall period. However, CAARs of conventional bonds are significantly different from zero only for the short symmetric event window $[-2,+2]$ and only according to the Patell Z test at a 10% level, thus implying very weak evidence for shareholder wealth effect creation through conventional bond issuances. Panel *A* of Table 8 demonstrates that the difference of CAARs between Sukuk and conventional bond issuances is only significant for the event window $[-20,-1]$. Both the Wilcoxon/Mann-Whitney and the Kruskal-Wallis tests reject the null hypothesis of equal CAARs by type of issuance (Sukuk vs. conventional bond) for the event window $[-20,-1]$ for the overall period. However, this difference is only significant at a 10% level of significance. In addition, using the Student tests we found insignificant findings for the overall period. Consequently, these tests suggest that the stock market does not react highly significantly differently to these two types of issuances and does not discriminate between fixed-rate Sukuk and fixed-rate conventional bonds, which is in line with the findings presented in Panel *A* of Table 7. Thus, this finding provides support for hypothesis 1.

Overall, these results indicate that there is no significant market reaction to fixed-rate Sukuk- and to fixed-rate conventional bond issuances in the larger time frame and over the period 2000 through to 2015. Such evidence is confirmed when using various statistical tests. We attribute this finding to the opposing effects, as conventional bond issuances positively signal the quality of the companies, thereby reducing the adverse selection problem arising from the existence of information asymmetries between managers and shareholders (Ross, 1977). Further, it can also scale down agency costs and morally hazardous behavior resulting from the conflicts of interest between managers and shareholders (Jensen, 1986) and thus lead to positive shareholder wealth effects. On the other hand, debt issuance may signal bad news about a company's future internal financing (Miller and Rock, 1985). Furthermore, it can also lead to an increase in agency costs caused by interest conflicts between managers and debtholders (Jensen and Meckling, 1976), thus leading to negative shareholder wealth effects. We attribute the finding of no highly significant difference in the Malaysian stock market reactions to fixed-rate Sukuk- and to fixed-rate conventional bond issuances during the period 2000 through to 2015 to the expectations of stock market participants regarding the nature of fixed-rate Sukuk from two perspectives. First, investors believed that fixed-rate Sukuks are not suitably compliant with Sharia, and they soon discovered their similarity to conventional bonds'. Second,

Stock market investors are rational and hence have inquired for information on the fundamentals of Sharia related to Sukuk structures and characteristics, which lead investors to perceive fixed-rate Sukuk as being like fixed-rate conventional bonds, rather than as “being neither debt nor equity”, as derived from Sharia.

However, this finding is in contrast with the recent results of the study by Godlewski et al. (2013), which documented that the stock market reacts differently to the issuance of Sukuk- as compared to conventional bonds. While conventional bond issuances are associated with no stock market reaction, Sukuk issuances are associated with a negative stock market reaction. Godlewski et al. (2013) attributed their results of the negative stock market reaction to Sukuk issuance to the following expectations of stock market participants: 1) Stock market investors may have the opinion that firms, that are in a poor financial shape or have even been excluded from the traditional bond market, will make use of the excess demand for Sukuk, especially from Islamic banks. 2) Stock market participants may take the view that an adverse selection mechanism may lead to companies with low profit expectations to favour Sukuk issuance with a profit-and-loss sharing structure, over conventional bond issuance. This implies that investors associate the issuance of Sukuk with a low quality of the borrower.

For the analysis related to the pre-crisis period, Panel B of Table 7 shows that Sukuk issuance reported significant and positive CAARs for two of the long asymmetric event windows [+1, +10] and [+1, +20], and one of the largest symmetric event window [-60, +60]. It is worth noting that the maximum significant CAAR (5.45%) of Sukuk issuance is on the long symmetric event window [-60, +60], while the minimum significant CAAR (2.15%) is on the long asymmetric window [+1, +10]. However, we find only the asymmetric event window [+1, +10] is significantly different from zero when using all three applied statistical tests. Consequently, there is little or no evidence for a shareholder wealth effect of Sukuk issuance during the pre-crisis period. Meanwhile, no significant CAARs are reported for conventional bond issuances across all event windows in the pre-crisis period. In other words, there is no wealth effect of conventional bond issuances on the stock market during the pre-crisis period. The finding of no significant difference in the Malaysian stock market reaction to fixed-rate Sukuk- and fixed-rate conventional bond issuances before the global financial crisis is, again, attributable to the stock market participant’s correct perception that fixed-rate Sukuk, that are offered in the bond market do not comply with Sharia, since they violate at least the prohibition of fixed return and thus mirror fixed-rate conventional bonds. In addition, we find few differences between post-crisis period and the two other periods considered. First, stock markets tend to be more inefficient during the pre-crisis period as compared to other chosen periods, since significant results were only obtained on long event windows. In other words, before the crisis shareholders appeared to underreact to Sukuk issuances and it took them longer to absorb the news.

Second, the issuance induced CAARs of Sukuk during the pre-crisis period are higher when compared to those during the overall and post-crisis periods. Panel *B* in Table 8 shows that none of the statistical tests for the difference of CAARs by type of issuance display significant results across all event windows for the pre-crisis period. This means that the stock market reacts in a similar manner to the issuances of fixed-rate Sukuk- and fixed-rate conventional bonds. This lends support to hypothesis 2.

With regard to the post-crisis period, Panel C of Table 7 shows that the average computed CAARs are positive for Sukuk issuances in the post-crisis period across all event windows. Notably, the CAARs of Sukuk issuances are positive and significantly different from zero according to all three applied statistical tests for the symmetric event window $[-2, +2]$ and for the asymmetric event windows $[-1, +2]$ and $[-20, -1]$. The CAARs for the symmetric event windows $[0, 0]$, $[-1, +1]$, and $[-3, +3]$, and for the asymmetric event windows $[-2, +1]$ and $[+1, +10]$ are also significantly different from zero, although admittedly only according to either one or two statistical tests. Therefore, these tests suggest that there is clear evidence for a wealth effect for the shareholders of Sukuk issuers during the post-crisis period, ranging between 0.24% for event window $[0, 0]$ and 1.99% for event window $[-20, -1]$. Meanwhile, the CAARs of conventional bond issuances for the symmetric event windows $[-2, +2]$ and $[-3, +3]$ and for the asymmetric event windows $[-1, +2]$ and $[+1, +10]$ are significantly different from zero according to either one or two statistical tests applied, ranging from 0.70% for event window $[-2, +2]$ to 1.73% for event window $[+1, +10]$. However, only the event window $[+1, +10]$ was found to be significantly different from zero according to all three applied statistical tests at the 5% level. Therefore, we conclude that there is no clear evidence for a wealth effect for the shareholders of conventional bond issuers for the post-crisis period.

Overall, the present study has identified similar patterns between the CAARs of Sukuk- and of conventional bond issuances. For the post-crisis period, the maximum CAAR of both Sukuk and conventional bond issuance was registered on the long asymmetric event window, whereas the minimum CAAR of both was registered on the short symmetric event window. This suggests no difference in the market reaction with respect to the time of both issuances, regardless of the sign of the market reaction. This study also ascertains that the number of significant CAARs of Sukuk issuances is reduced as the event window increases. This is an interesting finding, and might have resulted from the shareholders increasingly strong confidence in Sukuk as a financing source.

With respect to the results of statistical difference tests for the difference of CAARs by type of issue for the post crisis-period as shown in Panel C of Table 8, the Student test indicates that the mean difference of CAARs in Sukuk and in conventional bond issuances is significantly different from zero at the 10% level of significance for the asymmetric event window $[-20, -1]$, implying that the CAAR of Sukuk issuances is higher than that of conventional bond issuances for event window $[-20, -1]$. This is further supported by both the Wilcoxon/Mann-Whitney and the Kruskal-Wallis tests, which

indicates that there is a significant difference of CAARs with respect to the median between Sukuk- and conventional bond issuances for the same event window $[-20,-1]$ at the 5% level. Given that all three test statistics show a significant difference of CAARs by type of issue for the event window $[-20,-1]$, which suggests that there is a highly significant difference in the market reaction to Sukuk and to conventional bond issuances after the global financial crisis, which is in line with hypothesis 3.

Overall, these results indicate that while there is no significant market reaction to conventional bond issues, we observe a significant positive stock market reaction to fixed-rate Sukuk issuances after the global financial crisis. This could be attributed to the larger captive investor base for Sukuk securities, which creates cost advantages for Sukuk issuers and hence leads to lower cost of capital.

INSERT Table 7 here

INSERT Table 8 here

4.3. Robustness Checks

As a robustness test we estimate CAAR over selected event windows following the issuance of fixed-rate Sukuk and conventional bonds, once again using market models and conducting the difference significance tests using four different market indices of the FTSE Bursa Malaysia KLCI, the FTSE Bursa Malaysia Top 100, the FTSE Malaysia and TR Malaysia L. The results show that the CAAR estimations obtained using different market indices all provide almost exactly the same pattern of results, and hence validate the results of the CAAR estimation based on the FTSE Bursa Malaysia EMAS index. Using difference significance tests as above, we find that the same pattern of results hold, and thus again support the validity of the difference significance test, based on the FTSE Bursa Malaysia EMAS index.²⁰

To test the robustness of the results obtained by means of the market model, a multivariate analysis was conducted to identify the determinants of CAR. Consequently, the CAR of the event window that includes day -2 to day 2 is regressed on the data variables. Since the multivariate analysis sample is based upon the overall period, the output of the multivariate regression analysis, which is free of multicollinearity, autocorrelation and heteroscedasticity problems can also validate the results with respect to the overall period. The overall period was chosen, as it provides the largest sample size. Table 9 presents the estimates for various sets of independent variables to test the sensitivity of the results with regard to the inclusion of different controls. The results achieved indicate that the variable “Sukuk” is negative and insignificant in all estimates, thus validating the finding of an insignificant stock market reaction to Sukuk issuance for the overall period, which was derived from the univariate analysis. Hence, this finding lends support to hypothesis 1, which states that there is no significant

²⁰ Results are available upon request.

difference in the Malaysian stock market reaction to fixed-rate Sukuk as compared to fixed-rate conventional bond issuances in the period 2000 through 2015.

With regard to control variables, the variable “EBIT to interest expenses on debt” tends to have only a minimal impact on the CARs with a significance level of 10%. Concerning the industry dummy variables, “the consumer products and services” sector as well as the “retail” sector, are found to be significantly negative at the 10 % and at the 1% level respectively. This means that when companies within these sectors perform the issuance, the CAR would be lower.

INSERT Table 9 here

5. Conclusion

This paper investigated the stock market reactions to the issuance of fixed-rate Sukuk (ethical bonds) as compared to fixed-rate conventional bonds, and, specifically, whether there is a difference in the shareholder wealth effect of these two types of issuances. To examine the shareholder wealth effects, we used the conventional event study methodology and data on the Malaysian publicly listed non-financial companies from 2000 to 2015. The event study calculated the abnormal returns for all the individual companies in the full sample and subsamples, and cumulative abnormal returns were estimated using 14 different event windows of which five were symmetric and nine were asymmetric.

Our initial investigation suggests that there is no supportive evidence for a robust difference, using various applied statistical tests, in the Malaysian stock market reaction to fixed-rate Sukuk- and to fixed-rate conventional bond issuances during the overall period 2000 through 2015. Hence, we divided the full sample into pre-crisis period (2000-2007) and post-crisis period (2010-2015). According to the results of this analysis, we found insignificant difference in the Malaysian stock market reaction to fixed-rate Sukuk- and to fixed-rate conventional bond issuances before the global financial crisis. Interestingly, however, our results demonstrated a supportive and highly significant difference in the Malaysian stock market reaction to fixed-rate Sukuk- and to fixed-rate conventional bond issuances after the global financial crisis. While the findings associated with the overall and pre-crises periods could be attributed to accurate shareholder interpretation of the real nature of fixed-rate Sukuk perceived by stock market participants (investors succeeded to realize that fixed-rate Sukuk are not in compliance with the rules of Sharia and soon discovered their similarity to conventional bonds), the results on the post crisis sample could be attributed solely to the higher liquidity of Sukuk, resulting from a larger captive investor base, which creates cost advantages for Sukuk issuers and hence leads to lower cost of capital, and not to differences between these two types of issuances.

Arguably, there are many implications for research and practice from this study. Although currently still small, Sukuk is well integrated and has grown significantly. By comparing Sukuk with other similar ethical sources of traded capital may provide insights into the globalisation of such economic, trade and financial reforms. Furthermore, the fixed-rate Sukuk issuances created greater shareholder wealth effects than conventional bond issuances in Malaysia after the global financial crisis resulting in the higher liquidity of the former. This will lead to a further increase in the remaining volume of Sukuk in Malaysia because conventional publicly listed non-financial companies will start to increase capital through Sukuk due to the lower cost of capital, which in turn will benefit their shareholders. The results of this study, therefore, may be useful for investors and regulators in many other emerging markets outside Malaysia in terms of fixed-rate Sukuk and fixed-rate conventional bonds investment planning. Our findings could also be of interest to policy-makers who are continually adopting regulations in attempts to curb possible presumable conflicts of interest. Finally, for the financial managers, banks and other financial institutions, our results show that despite their original intention, fixed-rate Sukuk are not an alternative source of financing to fixed-rate conventional bonds.

Despite filling some of the gaps in current Sukuk literature, this study highlights a number of others for future research. For example, different types of issuers (such as sector and rating) could be used to compare conventional bond issuances with Sukuk. Furthermore, similar comparisons could be researched according to characteristics such as coupon type, principal amount, and maturity. In addition, exchange-based and partnership-based Sukuk could be compared in terms of their performance. Furthermore, market risk measures such as Beta and VAR, Jensen Alpha, Sharpe ratio, Treynor ratio, and Sortino ratio could all be drawn upon to analyse the risk-return characteristics of fixed-rate Sukuk and conventional bonds. Such research would add to that existing and widen existing knowledge about a key area of the financial world that looks set to continue to grow in the future.

References

- Ahmad, N. and Rahim, S. (2014). "CAAR Estimations by Sectors of Sukuk Issuance", *International Conference on Economics, Education and Humanities (ICEEH'14) Dec. 10-11, 2014 Bali (Indonesia)*.
- Ahmad, N. and Rusgianto, S. (2013). "Information Content of Post-Crisis Sukuk. Announcement in Malaysia", *Middle-East Journal of Scientific Research*, 13(1), 50 – 55.
- Alam, N., Hassan M. and Haque, M. (2013). "Are Islamic bonds different from conventional bonds?", International evidence from capital market tests. *Borsa Istanbul Review*, 13(3), 22-29.
- Ashhari, Z., Chun L. and Nassir, A. (2009). "Conventional vs Islamic Bond Announcements: The Effects on Shareholders's Wealth", *International Journal of Business and Management*, 4(6), 105-111.
- Athern, K. (2009). "Sample selection and event study estimation", *Journal of Empirical Finance*, 16(3), 466-482.
- Azmat, S., Skully M. and Brown, K. (2014). "Credit risk in Islamic joint venture bond", *Journal of Economic Behavior & Organization*, 103(7), 129-145.
- Boehmer, E., Musumeci, J. and Poulson, A. (1991). "Event-Study Methodology under Conditions of Event-Induced Variance", *Journal of Financial Economics*, 30 (2), 253-272.
- Brown, S. and Warner, J. (1985). "Using daily stock returns: the case of event studies", *Journal of Financial Economics*, 14(1), 3-31.
- Cakir, S. and Raei, F. (2007). "Sukuk vs. Eurobonds: Is there a difference in value-at-risk?", *International Monetary Fund Working Paper WP/07/237*.
- Carhart, M. (1997). "On Persistence in Mutual Fund Performance", *The Journal of Finance*, 52 (1), 57-82.
- Chen, C., Dong, L. and Wen, M. (2005). "Backdoor equity financing, firm characteristics, and shareholders' wealth", *Center for China and Business Research*.
- Chin, S. and Abdullah, N. (2012). "Announcements Effect of Corporate Bond Issuance and Its Determinants", *Contemporary Economics*, 7(1), 5-18.

- Corrado, C. (1989). "A Nonparametric Test for Abnormal Security-Price Performance in Event Studies", *Journal of Financial Economics*, 23(2), 385-396.
- De Jong, A., Kabir, R. and Nguyen, T. (2008). "Capital Structure around the World: the Roles of Firm and Country-Specific Determinants", *Journal of Banking and Finance*, 32(9), 1954-1969.
- De Miguel, A. and Pindado, J. (2001). "Determinant of Capital Structure: Evidence from Spanish Panel Data", *Journal of Corporate Finance*, 7(1), 77-99.
- Dutta, A. (2014). "Does Calendar Time Portfolio Approach Really Lack Power?", *International Journal of Business and Management*, 9 (9), 260-266.
- Eckbo, B. (1986). "Valuation effects of corporate debt offerings", *Journal of Financial Economics*, 15(1-2), 119-151.
- Elian, M. and Young-Taft, T. (2014). "Stock Market Reaction to Debt-Based Securities: Empirical Evidence", *Frontiers in Finance and Economic*, 11 (2), 46-72.
- Fama, E. and French, K. (1993). "Common Risk Factors in the Returns of Stocks and Bonds", *Journal of Financial Economics*, 33 (1), 3-56.
- Godlewski, C., Turk-Aris, R. and Weill, L. (2013). "Sukuk vs. conventional bonds: A stock market perspective", *Journal of Comparative Economics*, 41(3), 745-761.
- Godlewski, C., Turk-Ariss, R., Weill, L. Goel, R. and Mehrotra, A. (2011), Do markets perceive sukuk and conventional bonds as different financing instruments?, Bank of Finland, BOFIT, Institute for Economies in Transition, Discussion Papers 6/2011, 1-37.
- Guha, K. and Kar, S. (2006) "The corporate debt market. A firm-level panel study for India (Research paper No. 2006/50)", *World Institute for Development Economics Research*.
- Howton, S., Howton, S., and Perfect, S. (1998). "The Market Reaction to Straight Debt Issues: The Effects of Free Cash Flow", *Journal of Financial Research*, 21(2), 219-228.
- Ibrahim, Y. and Minai, M. (2009). "Islamic bonds and wealth effects: evidence from Malaysia", *Investment Management and Financial Innovations*, 6 (1), 184-191.

Islamic Financial Services Industry Stability Report (IFSB) (2015), Level 5, Sasana Kijang, Bank Negara Malaysia 2, Jalan Dato' Onn, 50480 Kuala Lumpur, Malaysia [online], available:http://www.ifsb.org/docs/20150520_IFSB%20Islamic%20Financial%20Services%20Industry%20Stability%20Report%202015_final.pdf[accessed 5 August 2015].

Jensen, M. and Meckling, W. (1976) "Theory of the firm: managerial behaviour, agency costs, and capital structure", *Journal of Financial Economics*, 76 (2), 323-339.

Jensen, M. (1986). "Agency Cost of Free Cash Flow, Corporate Finance and Takeover", *American Economic Review*, 76(2), 323-339.

Kapoor, A. and Pope, R. (1997). "The relationship between corporate debt issuance and changes in systematic risk", *Journal of Financial & Strategic Decision*, 10(3), 13-22.

Kothari, S. and Warner, J. (2007). "Econometrics of event studies". In B.E. Eckbo (Ed.), *Handbook of Corporate Finance*, 1, 3-36. Amsterdam: North Holland Elsevier.

Krasker, W. (1986). "Stock Price Movements in Response to Stock Issues under Asymmetric Information", *Journal of Finance*, 41(1), 93-105.

Leland, H., and Pyle, D. (1977). "Informational asymmetries, financial structure, and financial intermediation", *Journal of Finance*, 32(2), 371-388.

Lyon, J., Barber, B. and Tsai, C. (1999) "Improved Methods for Tests of Long-Run Abnormal Stock Returns", *The Journal of Finance*, 54(1), 165-201.

MacKinlay, A. (1997) "Event Studies in Economics and Finance", *Journal of Economic Literature*, 35 (1), 13-39.

Martel, M. and Padron, Y. (2006), "Debt and information content: Evidence in the Spanish stock market", *International Research Journal of Finance & Economics*, 4(1), 213-219.

McMillen, M. (2007). "Contractual Enforceability Issues: Sukuk and Capital Markets Development", *Chicago Journal of International Law*, 7(2), 427-467.

Miller, D. and Puthenpurackal, J. (2002). "The Costs, Wealth Effects, and Determinants of

International Capital Raising: Evidence from Public Yankee Bonds”, *Journal of Financial Intermediation*, 11(4), 455-485.

Miller, M. and Rock, K. (1985). “Dividend policy under asymmetric information”, *Journal of Finance*, 40 (4), 1031-1051.

Miller, M. and Modigliani, F. (1963) “Corporate Income Taxes and the Cost of Capital : A Correction”, *American Economic Review*, 53 (3), 433-43.

Miller, N., Challoner, J. and Atta, A. (2007). “UK welcomes the Sukuk”, *International Financial Law Review*, 26 (5), 24-25.

Modirzadehbami, S. and Mansoufar, G. (2011). “Information content of Islamic private debt announcement: evidence from Malaysia”, *World Academy of Science Engineering and Technology*, 77(12), 572-578.

Myer, S. and Majluf, N. (1984). “Corporate Financing and Investment Decision when Firms have Information that Investors do not have”, *Journal of Financial Economics*, 13 (2), 187-221.

Pandey, I. (2004). “Capital structure, profitability and market structure: Evidence from Malaysia”, *Asia Pacific Journal of Economics & Business*, 8(2), 78-91.

Patell, J. (1976). “Corporate Forecasts of Earnings Per Share and Stock Price Behavior: Empirical Tests”, *Journal of Accounting Research*, 14(2), 246-274.

Rahim, S. and Ahmad, N. (2014). “Stock Market Reactions Following Sukuk Announcement: An Analysis of Dow Jones Islamic Market Index (2004-2011)” *IOSR Journal of Economics and Finance*, 5 (6), 29-35.

Rahim, S. and Ahmad, N. (2015). “Asymmetric Market Reactions to Sukuk Issuance”, *International Journal of Novel Research in Humanity and Social Sciences*, 2 (3), 48-56.

Rajan, R. and Zingales, L. (1995). “What Do We Know About Capital Structure? Some Evidence from International Data”, *Journal of Finance*, 50 (5), 1421-1460.

Ramasamy, R., Munisamy, S. and Helmi, M. (2011). “Relative risk of Islamic Sukuk over government and conventional bonds”, *Global Journal of Management and Business Research*, 11 (6), 4-12.

Ross, S. (1977). "The determination of financial structure: The incentive-signalling approach", *Bell Journal of Economics*, 8 (1), 23-40.

Saeed, A., and Salah, O. (2014). "Development of Sukuk: Pragmatic and Idealist Approaches to Sukuk Structure", *Journal of International Banking Law and Regulation*, 29 (1), 41-52.

Salah, O. (2014). *Sukuk structures: Legal engineering under Dutch law* Tilburg: Eleven International Publishing.

Shao, C., Sheng, S., Hsing, A. and Chia, W. (2007). "Investment opportunities, free cash flow, and stock valuation effects of secured debt offerings", *Review of Quantitative Finance and Accounting*, 28 (2), 123-145.

Sherif, M. and Shaairi, N. (2013). "Determinants of demand on family Takaful in Malaysia", *Journal of Islamic Accounting and Business Research*, 4 (1), 26 – 50.

Stephen, P., and David, J. (1996). "Stock Price Effect of High-Yield Debt Issues", *Journal of Economics and Finance*, 20 (1), 133-146.

Suchard, J. and Singh, M. (2006). "The determinants of the hybrid security issuance decision for Australian firms", *Pacific-Basin Finance Journal*, 14 (3), 269-290.

Usmani, M. (2007). "Sukuk and their Contemporary Application" (Translated from the original Arabic by Sheikh Yusuf Talal DeLorenzo), In AAOIFI Sharia Council meeting, Saudi Arabia.

Wilson, R. (2008). "Innovation in structuring of Sukuk securities", *Humanomics*, 24 (3), 170-181.

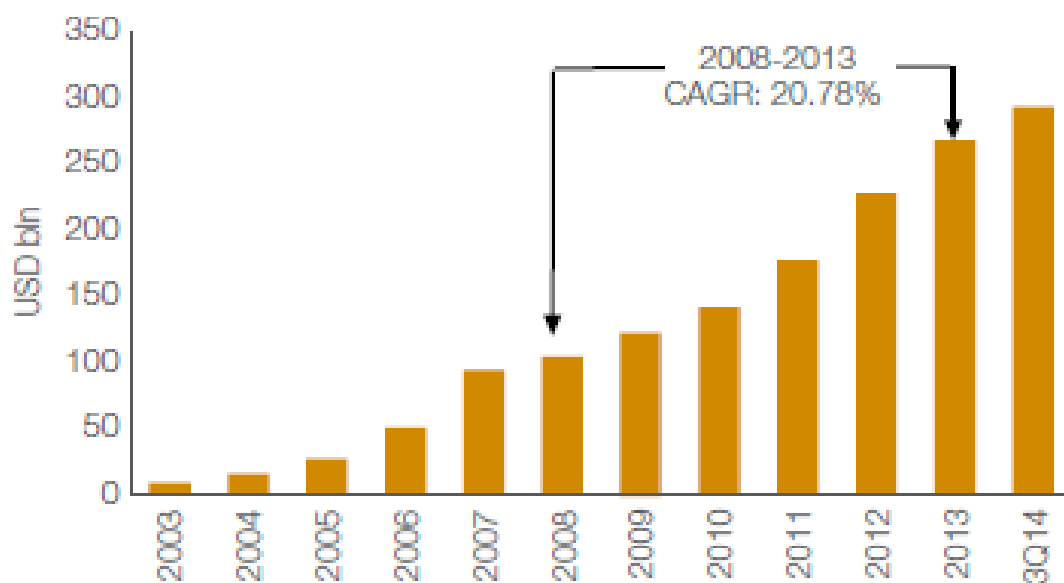
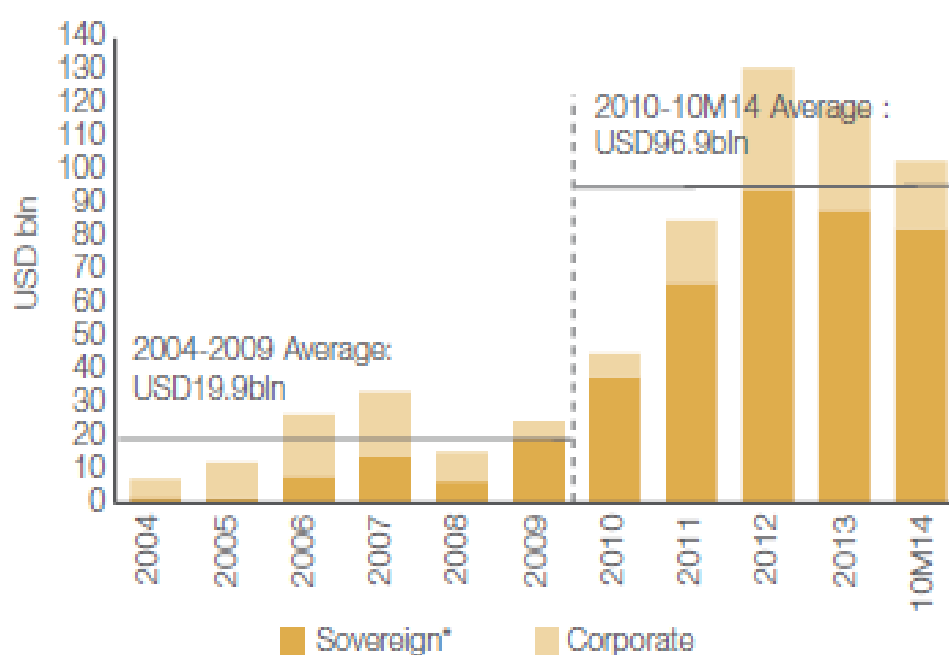


Figure 1: Sukuk Outstanding Trend
Source: Bloomberg, IFIS, Zawya, KFHR



Source: Bloomberg, IFIS, Zawya, KFHR
Figure 2: Sukuk Issuance Trend

Table 1: Sukuk vs. Conventional Bonds

	<i>Conventional Bonds</i>	<i>Sukuk</i>
Asset ownership	Bonds do not give the investor a share of ownership in the asset, project, business, or joint venture they support. They are a debt obligation from the issuer to the bond holder.	Sukuk give the investor partial ownership in the asset on which the Sukuk are based.
Investment criteria	Generally, bonds can be used to finance any asset, project, business, or joint venture that complies with local legislation.	The asset on which Sukuk are based must be Sharia-compliant.
Issue unit	Each bond represents a share of debt.	Each Sukuk represents a share of the underlying asset.
Issue price	The face value of a bond price is based on the issuer's credit worthiness (including its rating).	The face value of Sukuk is based on the market value of the underlying asset.
Investment rewards and risks	Bond holders receive regularly scheduled (and often fixed rate) interest payments for the life of the bond, and their principal amount is guaranteed to be returned at the bond's maturity date.	Sukuk holders receive a share of profits from the underlying asset (and accept a share of any loss incurred).
Effects of costs	Bond holders are not generally affected by costs related to the asset, project, business, or joint venture they support. The performance of the underlying asset does not affect investor rewards.	Sukuk holders are affected by costs related to the underlying asset. Higher costs may translate to lower investor profits and vice versa.

Source: Jamaldeen, F., How Sukuk (Islamic Bonds) Differ from Conventional Bonds, Islamic Finance for Dummies

Table 2: Definition of Variables

Earnings Before Interest and Taxes (EBIT):	This figure represents the earnings of a company before interest expense and income taxes. It was measured by taking the pre-tax income, adding back interest expense on debt and subtracting interest capitalized.
Interest Expense on Debt:	This figure represents the service charge for the use of capital before the reduction for interest capitalized.
Operating Profit Margin:	This figure was calculated by the division of Operating Income by Net Sales or Revenues.
Total Asset:	This figure represents the sum of total current assets, long-term receivables, investment in unconsolidated subsidiaries, other investments, net property plant and equipment and other assets.
Total Liability:	This figure represents all short and long-term obligations expected to be satisfied by the company.
Total Equity:	This figure represents the sum of common equity, preferred stock, minority interest, long-term debt, non-equity reserves and deferred tax liability in untaxed reserves.

Table 3: Correlation Matrix

	Coupon	Maturity	Ln (total assets)	Equity/total assets	EBIT/interest expense on debt	Operating profit margin	Return on Asset
Coupon	1.00 -----						
Maturity	0.22 (0.008)***	1.00 -----					
Ln (total assets)	-0.38 (0.000)***	0.21 (0.010)**	1.00 -----				
Equity/total assets	-0.03 (0.749)	-0.26 (0.001)***	-0.30 (0.000)***	1.00 -----			
EBIT/interest expense on debt	-0.10 (0.236)	-0.05 (0.534)	-0.17 (0.036)**	0.28 (0.000)***	1.00 -----		
Operating profit margin	-0.20 (0.017)**	-0.14 (0.100)	0.07 (0.370)	0.09 (0.251)	0.07 (0.390)	1.00 -----	
Return on Asset	-0.14 (0.079)*	-0.17 (0.038)**	-0.15 (0.062)*	0.14 (0.093)*	0.29 (0.000)*	0.42 (0.000)***	1.00 -----

This table provides the correlations between the variables used in this study. The values in parantheses are the p-values for t-statistics.

*Significant differences for means and medians of the variables by bondy type at the 10% level.

**Significant differences for means and medians of the variables by bondy typeat the 5% level.

***Significant differences for means and medians of the variables by bondy type at the 1% level.

Table 4: Definition of the Independent Variables

No.	Independent variable	Classification	Definition	Hypothesis Development	Expected sign
1	Sukuk	Issue-specific	Dummy variable equals to 1 if the issue is a Sukuk and 0 otherwise.		+
2	Coupon	Issue-specific	Coupon represents the fixed interest rate for that specific issue	Ashari et al. (2009) indicated that coupon is inversely related with the CAR.	-
3	Maturity	Issue-specific	Bond maturity, measured of the the issue date	In general, the longer the term, the higher the coupon. Bondholders want to be compensated for the additional risk of tying up money for a longer period (Ashari et al. 2009).	-
4	Ln (total assets)	Issuer-specific	Natural logarithm of total assets denominated in Malaysian Ringit as a proxy of firm size.	Stein (1992) suggested that firm size signals the degree of information asymmetry. It is believed that large firms tend to have greater coverage, draw more attention and experience greater checking by stock analysts and institutional investors.	+
5	Equity/total assets	Issuer-specific	Total equity divided by total assets. This is a measure of a firm's equity level.	Li et al. (2014) indicated that companies with lower equity level are regarded more risky and bear higher costs of financial distress cost.	-
6	EBIT/interest expense on debt	Issuer-specific	EBIT divided by total interest expense on debt. This is a measure of a company's ability to meet its interest payment (interest coverage ratio).	Godlewski et al. (2013) found no significant influence.	/
7	Operating profit margin	Issuer-specific	Operating Income divided by Net Sales or Revenues as a proxy for profitability.	Lewis et al. (2003) found no significant effect of profitability in the US market.	/
8	Return on Asset	Issuer-specific	EBIT divided by total assets as a proxy for profitability.	Stein (1992) concluded that profitability is negatively correlated with the probability of the appearance financial distress. Furthermore, low profitability is associated with higher risk uncertainty and greater probability of a shift towards riskier investment policy.	-
9	Real Estate	Industry effect	Dummy variable equals to 1 if the industry is real estate and 0 otherwise	Lack of empirical evidence	+/-
10	Industrials	Industry effect	Dummy variable equals to 1 if the industry is industrials and 0 otherwise	Lack of empirical evidence	+/-
11	Consumer Staples	Industry effect	Dummy variable equals to 1 if the industry consumer staples and 0 otherwise	Lack of empirical evidence	+/-
12	Consumer Products and Services	Industry effect	Dummy variable equals to 1 if the industry is consumer products and services and 0 otherwise	Lack of empirical evidence	+/-
13	Telecommunications	Industry effect	Dummy variable equals to 1 if the industry is telecommunications and 0 otherwise	Lack of empirical evidence	+/-
14	Energy and Power	Industry effect	Dummy variable equals to 1 if the industry is energy and power and 0 otherwise	Lack of empirical evidence	+/-
15	Materials	Industry effect	Dummy variable equals to 1 if the industry is materials and 0 otherwise	Lack of empirical evidence	+/-
16	High Technology	Industry effect	Dummy variable equals to 1 if the industry is high technology and 0 otherwise	Lack of empirical evidence	+/-
17	Retail	Industry effect	Dummy variable equals to 1 if the industry is retail and 0 otherwise	Lack of empirical evidence	+/-
18	Healthcare	Industry effect	Dummy variable equals to 1 if the industry is healthcare and 0 otherwise	Lack of empirical evidence	+/-

Table 5: Descriptive Statistics by Bond Type

Variable	N	Mean	Median	Maximum	Minimum	Std. Dev.
<i>Conventional bonds</i>						
Principal amount						
inc. over allotment sold	87	91.87	39.49	704.52	1.32	125.67
Proceeds amount						
inc. over allotment sold	87	91.57	39.49	704.52	1.32	125.37
Coupon	87	5.29	5.00	8.85	2.00	1.41
Issue price	87	99.76	100.00	100.00	88.65	1.45
Maturity	87	5.55**	5.07	15.22	1.01	3.19
<i>Sukuk</i>						
Principal amount						
inc. over allotment sold	122	87.89	60.28	811.53	2.72	107.85
Proceeds amount						
inc. over allotment sold	122	87.85	60.28	811.53	2.72	107.83
Coupon	116	5.36	5.05	9.80	3.00	1.39
Issue price	122	99.97	100.00	100.00	97.34	0.25
Maturity	122	9.84**	5.07	99.99	1.01	19.05

This table provides the mean, median, maximum, minimum and standard deviation for several characteristics of the issuances by bond type. All variables are given in millions of US Dollars, with the exception of coupon and issue price (percent), maturity (years), and number of observations. The principal amount incl. over allotment sold represents all tranches of the transaction and is calculated by accumulating the principal amount plus over allotment sold for each tranche within the transaction. The proceeds amount incl. over allotment sold is calculated by accumulating the principal amount plus over allotment sold multiplied by offer price for each tranche within the transaction. Coupon is the fixed interest rate of the security. Issue price is the price of the security at the date of issue.

*Significant differences for means and medians of the variables by bond type at the 10% level.

**Significant differences for means and medians of the variables by bond type at the 5% level.

***Significant differences for means and medians of the variables by bond type at the 1% level.

Table 6: Descriptive Statistics by Issuer Type

Variable	N	Mean	Median	Maximum	Minimum	Std. Dev.
<i>Conventional bonds</i>						
EBIT	61	738.94	241.31	3,079.44	-226.59	903.75
EBIT/interest expense on debt	61	21.67	3.82	595.18	-1.68	82.72
Equity/total assets	61	0.47	0.47	0.76	0.21	0.15
Interest expense on debt	61	236.85*	50.39	1,910.80	0.35	371.33
Operating profit margin	61	16.78***	14.43**	49.67	-12.05	12.16
Return on assets	61	0.10**	0.07	0.75	-0.03	0.12
Total assets	61	10,827.02	2,981.69	53,619.49	154.65	14,502.25
Total equity	61	3,839.34	1,538.88	17,027.50	72.59	4,411.24
Total liability	61	6,987.68	1,706.05	38,061.75	46.87	10,491.82
<i>Sukuk</i>						
EBIT	89	502.82	167.36	3,348.66	-2,370.13	861.31
EBIT/interest expense on debt	89	10.82	4.67	253.44	-12.12	28.23
Equity/total assets	89	0.48	0.49	0.98	0.08	0.16
Interest expense on debt	89	133.71*	34.33	1,910.80	0.15	283.35
Operating profit margin	89	11.76***	10.77**	47.82	-14.90	9.95
Return on assets	89	0.07**	0.07	0.19	-0.19	0.06
Total assets	89	9,060.12	3,533.01	63,381.60	40.11	12,805.38
Total equity	89	3,911.27	1,585.98	24,036.21	20.82	5,291.85
Total liability	89	5,148.85	1,988.84	47,934.50	19.29	8,555.52

This table provides the mean, median, maximum, minimum and standard deviation for several issuer characteristics by bond type. All variables are in millions of Malaysian Ringgit, with the exception of financial ratios and number of observations.

*Significant differences for means and medians of the variables by bond type at the 10% level.

**Significant differences for means and medians of the variables by bond type at the 5% level.

***Significant differences for means and medians of the variables by bond type at the 1% level.

Table 7: CAAR Estimation using a Market Model and the FTSE Bursa Malaysia EMAS Index

Event window	Type of announcement	CAAR	Pos : Neg	t-statistic	Patell Z	BMP-test	Event window	Type of announcement	CAAR	Pos : Neg	t-statistic	Patell Z	BMP-test
Panel A: Overall period													
[0,0]	Sukuk	0.28%	72:50	1.75*	2.21**	1.96*	[-60,60]	Sukuk	0.65%	67:52	0.28	1.06	0.82
	Conventional bond	-0.06%	42:44	-0.29	-0.24	-0.23		Conventional bond	-0.35%	39:46	-0.14	-0.42	-0.32
[-1,1]	Sukuk	-0.01%	59:63	-0.03	1.26	0.97	[-60,-1]	Sukuk	0.75%	63:56	0.50	0.50	0.46
	Conventional bond	0.16%	44:42	0.44	0.49	0.47		Conventional bond	0.13%	33:52	0.10	-0.09	-0.09
[-2,2]	Sukuk	0.18%	67:55	0.44	2.06**	1.59	[1,60]	Sukuk	-0.35%	61:58	-0.23	0.74	0.55
	Conventional bond	0.61%	49:37	1.19	1.74*	1.39		Conventional bond	-0.43%	36:49	-0.25	-0.48	-0.40
[-3,3]	Sukuk	0.38%	64:58	0.79	1.89*	1.55	[-10,-1]	Sukuk	-0.47%	58:61	-1.02	-0.94	-0.96
	Conventional bond	0.55%	43:43	1.01	1.50	1.28		Conventional bond	0.36%	44:41	0.67	0.36	0.35
[-1,2]	Sukuk	0.22%	70:52	0.56	2.42**	1.81*	[1,10]	Sukuk	0.62%	70:49	1.15	2.34**	2.24**
	Conventional bond	0.43%	44:42	0.98	1.51	1.15		Conventional bond	0.87%	44:41	1.29	1.39	1.24
[-2,1]	Sukuk	-0.05%	60:62	-0.16	0.97	0.79	[-20,-1]	Sukuk	0.79%	75:44	1.04	1.46	1.37
	Conventional bond	0.33%	50:36	0.75	0.86	0.77		Conventional bond	0.07%	40:45	0.08	0.38	0.36
[-3,1]	Sukuk	-0.09%	60:62	-0.24	0.62	0.47	[1,20]	Sukuk	0.59%	60:59	0.77	2.27**	1.79*
	Conventional bond	0.22%	39:47	0.48	0.63	0.56		Conventional bond	0.59%	44:41	0.68	0.70	0.63
Panel B: Pre-crisis period													
[0,0]	Sukuk	0.00%	18:20	0.00	0.12	0.13	[-60,60]	Sukuk	5.45%	21:17	1.02	1.78*	1.22
	Conventional bond	-0.17%	22:25	-0.52	-0.55	-0.45		Conventional bond	0.10%	23:24	0.02	-0.12	-0.08
[-1,1]	Sukuk	-0.88%	14:24	-1.41	-1.41	-1.36	[-60,-1]	Sukuk	4.11%	22:16	1.32	1.23	1.21
	Conventional bond	0.01%	22:25	0.02	0.00	0.00		Conventional bond	0.91%	18:29	0.42	0.15	0.15
[-2,2]	Sukuk	-1.21%	17:21	-1.29	-1.16	-1.12	[1,60]	Sukuk	1.33%	18:20	0.39	1.29	0.82
	Conventional bond	0.48%	28:19	0.59	0.83	0.68		Conventional bond	-0.64%	20:27	-0.23	-0.25	-0.18
[-3,3]	Sukuk	-0.62%	18:20	-0.70	-0.27	-0.30	[-10,-1]	Sukuk	-0.59%	17:21	-0.68	-1.14	-1.15
	Conventional bond	0.67%	24:23	0.76	1.00	0.92		Conventional bond	1.01%	26:21	1.23	0.90	0.92
[-1,2]	Sukuk	-1.05%	18:20	-1.20	-1.10	-0.99	[1,10]	Sukuk	2.15%	23:15	2.23**	2.65***	2.51**
	Conventional bond	0.13%	23:24	0.18	0.17	0.14		Conventional bond	0.82%	22:25	0.74	0.54	0.47
[-2,1]	Sukuk	-1.04%	15:23	-1.50	-1.42	-1.49	[-20,-1]	Sukuk	1.22%	25:13	1.09	0.86	1.00
	Conventional bond	0.37%	25:22	0.51	0.76	0.65		Conventional bond	0.22%	21:26	0.16	0.40	0.34
[-3,1]	Sukuk	-0.91%	19:19	-1.31	-1.10	-1.18	[1,20]	Sukuk	2.22%	21:17	1.46	2.76***	1.73*
	Conventional bond	0.44%	18:29	0.57	0.67	0.57		Conventional bond	1.05%	25:22	0.75	0.76	0.67
Panel C: Post-crisis period													
[0,0]	Sukuk	0.24%	43:26	1.25	1.96*	1.54	[-60,60]	Sukuk	2.32%	42:24	1.12	1.21	1.01
	Conventional bond	0.13%	17:14	0.75	0.45	0.51		Conventional bond	-1.00%	13:17	-0.41	-0.31	-0.28
[-1,1]	Sukuk	0.20%	36:33	0.53	2.15**	1.44	[-60,-1]	Sukuk	1.74%	37:29	1.27	0.72	0.65
	Conventional bond	0.15%	18:13	0.40	0.45	0.40		Conventional bond	-0.80%	13:17	-0.58	-0.38	-0.42
[-2,2]	Sukuk	0.76%	42:27	1.89*	3.52***	2.40**	[1,60]	Sukuk	0.39%	36:30	0.28	0.78	0.63
	Conventional bond	0.70%	17:14	1.22	1.68*	1.17		Conventional bond	-0.37%	14:16	-0.26	-0.13	-0.15
[-3,3]	Sukuk	0.64%	37:32	1.21	2.57***	1.80*	[-10,-1]	Sukuk	0.12%	33:33	0.25	0.19	0.20
	Conventional bond	0.92%	17:14	1.38	1.81*	1.27		Conventional bond	-0.80%	14:16	-1.30	-1.09	-1.07
[-1,2]	Sukuk	0.71%	43:26	1.79*	3.83***	2.56**	[1,10]	Sukuk	0.59%	41:25	1.16	1.78*	1.90*
	Conventional bond	0.91%	18:13	1.61	2.35**	1.48		Conventional bond	1.73%	20:10	2.31**	2.48**	2.33**
[-2,1]	Sukuk	0.24%	37:32	0.63	1.96**	1.37	[-20,-1]	Sukuk	1.99%	43:23	2.37**	2.02**	1.77*
	Conventional bond	-0.06%	19:12	-0.13	-0.08	-0.07		Conventional bond	-0.40%	15:15	-0.48	-0.35	-0.36
[-3,1]	Sukuk	0.23%	32:37	0.47	1.63	1.04	[1,20]	Sukuk	0.66%	32:34	1.03	1.57	1.59
	Conventional bond	0.15%	18:13	0.30	0.35	0.31		Conventional bond	0.85%	17:13	0.79	1.03	0.91

This table displays CAARs obtained using a market model and the FTSE Bursa Malaysia EMAS index as a proxy for market return by type of event (Sukuk vs. conventional bond issuances) in the third and the tenth column, and across fourteen event windows. Panel A provides the results for the overall period (208 events, 122 of which Sukuk and 86 conventional bond issuances), Panel B provides the results for the pre-crisis period (85 events, 38 of which Sukuk and 47 conventional bond issuances) and Panel C provides results for the post-crisis period (100 events, of which 69 Sukuk and 31 conventional bond issuances). The number of positive and negative CARs are shown in the fourth and the eleventh column respectively. The fifth and the twelfth column provide the conventional t-statistic of CAARs, while column sixth and thirteenth show the standardized residual test-statistic (Patell Z). The seventh and last column provides the standardized cross-sectional test statistic (BMP t-stat).

*Significance at the 10% level.**Significance at the 5% level.***Significance at the 1% level.

Table 8: Difference Significance Tests by Event Type for CAARs
using FTSE Bursa Malaysia EMAS Index

Event window	Student test		Wilcoxon/Mann-Whitney test		Kruskal-Wallis test	
	t	Prob. > t	Z	Prob. > Z	Chi ²	Prob. > Chi ²
Panel A: Overall period						
[0,0]	1.343	0.181	1.545	0.122	2.391	0.122
[-1,1]	0.357	0.722	0.032	0.975	0.001	0.974
[-2,2]	0.657	0.512	0.060	0.952	0.004	0.952
[-3,3]	0.236	0.814	0.366	0.714	0.135	0.713
[-1,2]	0.352	0.725	0.467	0.641	0.219	0.640
[-2,1]	0.716	0.475	0.574	0.566	0.331	0.565
[-3,1]	0.527	0.599	0.294	0.769	0.087	0.768
[-60,60]	-0.286	0.775	0.861	0.389	0.744	0.389
[-60,-1]	-0.295	0.768	1.119	0.263	1.254	0.263
[1,60]	-0.036	0.972	0.734	0.463	0.540	0.462
[-10,-1]	1.174	0.242	0.621	0.535	0.387	0.534
[1,10]	0.294	0.769	0.897	0.370	0.807	0.369
[-20,-1]	-0.627	0.531	1.823*	0.068	3.329*	0.068
[1,20]	0.008	0.994	0.690	0.490	0.478	0.489
Panel B: Pre-crisis period						
[0,0]	-0.383	0.703	0.473	0.636	0.228	0.633
[-1,1]	1.035	0.304	0.800	0.424	0.647	0.421
[-2,2]	1.365	0.176	1.030	0.303	1.069	0.301
[-3,3]	1.021	0.310	0.234	0.815	0.057	0.811
[-1,2]	1.064	0.291	0.605	0.545	0.372	0.542
[-2,1]	1.383	0.170	1.304	0.192	1.711	0.191
[-3,1]	1.272	0.207	0.508	0.611	0.263	0.608
[-60,60]	-0.796	0.428	1.021	0.307	1.051	0.305
[-60,-1]	-0.873	0.385	0.906	0.365	0.829	0.363
[1,60]	-0.454	0.651	0.650	0.516	0.428	0.513
[-10,-1]	1.331	0.187	1.092	0.275	1.201	0.273
[1,10]	-0.891	0.375	1.383	0.167	1.926	0.165
[-20,-1]	-0.536	0.594	1.153	0.249	1.341	0.247
[1,20]	-0.566	0.573	0.676	0.499	0.463	0.496
Panel C: Post-crisis period						
[0,0]	-0.341	0.734	0.671	0.502	0.455	0.500
[-1,1]	-0.073	0.942	0.060	0.953	0.004	0.950
[-2,2]	-0.075	0.940	0.738	0.461	0.550	0.458
[-3,3]	0.305	0.761	0.134	0.893	0.019	0.890
[-1,2]	0.280	0.780	0.619	0.536	0.387	0.534
[-2,1]	-0.466	0.643	0.328	0.743	0.110	0.740
[-3,1]	-0.104	0.917	0.402	0.687	0.165	0.685
[-60,60]	-0.953	0.343	1.482	0.138	2.208	0.137
[-60,-1]	-1.135	0.259	1.395	0.163	1.957	0.162
[1,60]	-0.331	0.742	0.652	0.514	0.430	0.512
[-10,-1]	-1.105	0.272	0.992	0.321	0.992	0.319
[1,10]	1.262	0.210	0.613	0.540	0.380	0.538
[-20,-1]	-1.747*	0.084	2.130**	0.033	4.555**	0.033
[1,20]	0.156	0.876	0.304	0.761	0.095	0.758

This table displays the results of the Student, the Wilcoxon/Mann-Whitney and the Kruskal-Wallis tests for the difference between CAARs. It is obtained using a market model and FTSE Bursa Malaysia EMAS index as a proxy for market return by type of event (Sukuk vs. conventional bond issuances) across each of the fourteen event windows. For the first test, the null hypothesis is that the difference of CAARs between Sukuk and conventional bond events is zero. For the final two tests, the null hypothesis is that the Sukuk and conventional bond events samples derive from identical populations. Panel A provides results for the overall period (208 events, 122 of which Sukuk and 86 conventional bond issuances), Panel B provides results for the pre-crisis period (85 events, 38 of which Sukuk and 47 conventional bond issuances) and Panel C provides results for the post-crisis period (100 events, 69 of which Sukuk and 31 conventional bond issuances).

*Significance at the 10% level.**Significance at the 5% level.***Significance at the 1% level.

Table 9: Multivariate Analyses of CARs

Independent variables	Dependent variable: CAR in event window [-2,2]					
	[1]	[2]	[3]	[4]	[5]	[6]
Intercept	0.003 (1.062)	0.002 (0.203)	-0.011 (-0.355)	-0.022 (-0.903)	-0.030 (-0.751)	-0.006 (-0.153)
Sukuk	-0.001 (-0.253)	-0.001 (-0.249)	-0.001 (-0.228)	-0.001 (-0.197)	-0.002 (-0.369)	-0.001 (-0.218)
Coupon		-0.012 (-0.069)	0.028 (0.131)		0.107 (0.490)	0.149 (0.655)
Maturity		0.000 (0.499)	0.000 (0.332)		0.000 (0.156)	0.000 (-0.515)
Ln (total assets)			0.002 (0.488)	0.003 (0.887)	0.004 (0.951)	0.003 (0.560)
Equity/total assets				0.015 (0.876)	0.003 (0.150)	0.002 (0.065)
EBIT/interest expense on debt					0.001* (1.694)	0.001 (1.159)
Operating profit margin					0.000 (-0.576)	0.000 (-0.521)
Return on Asset					-0.056 (-0.562)	-0.063 (-0.527)
Real Estate						-0.013 (-1.058)
Industrials						-0.013 (-1.119)
Consumer Staples						-0.011 (-1.069)
Consumer Products and Services						-0.027* (-1.930)
Telecommunications						0.002 (0.180)
Energy and Power						-0.015 (-1.197)
Materials						-0.006 (-0.480)
High Technology						-0.007 (-0.375)
Retail						-0.033*** (-2.851)
Healthcare						-0.002 (-0.191)
R ²	0.000	0.002	0.003	0.009	0.034	0.084
Adj. R ²	-0.006	-0.019	-0.024	-0.012	-0.021	-0.043
F-statistic	0.069	0.081	0.125	0.435	0.619	0.661
Number of observations	148	148	148	148	148	148

This table presents the estimations of OLS regressions with heteroscedasticity-consistent standard errors. The dependent variable is the CAR computed for the event window [-2,2]. It is obtained using a market model. The FTSE Bursa Malaysia EMAS index is used as a proxy of market return. All variables except the dummy variables are winsorized at a level of 10%. The values in parantheses are t-statistics.

* Significant differences for means and medians of the variables by bondy type at the 10% level.

**Significant differences for means and medians of the variables by bondy typeat the 5% level.

***Significant differences for means and medians of the variables by bondy type at the 1% level.